

REMARKS

Claims 1 through 4 and 6 through 8 are pending in this Application. Claim 1 has been amended, claim 5 cancelled and new claim 8 added. Care has been exercised to avoid the introduction of new matter. Indeed, adequate descriptive support for the present Amendment should be apparent throughout the originally filed disclosure as, for example, Figs. 5 through 11 and the related discussion thereof in the written description of the specification, noting paragraph [21]. Applicant submits that the present Amendment does not generate any new matter issue.

Claim 1 (and presumably claims 4 through 7) were rejected under 35 U.S.C. § 102 for lack of novelty as evidenced by Meyer.

In the statement of the rejection the Examiner referred to, *inter alia*, Figs. 4, 6, 7 and 11 of Meyer asserting the disclosure of a method corresponding to that claimed. This rejection is traversed.

The factual determination of lack of novelty under 35 U.S.C. § 102 requires the identical disclosure in a single reference of each element of a claimed invention, such that the identically claimed invention is placed in to the recognized possession of one having ordinary skill in the art. *Dayco Prods., Inc. v. Total Containment, Inc.*, 329 F.3d 1358, 66 USPQ2d 1801 (Fed. Cir. 2003); *Crown Operations International Ltd. v. Solutia Inc.*, 289 F.3d 1367, 62 USPQ2d 1917 (Fed. Cir. 2002). In imposing a rejection under 35 U.S.C. § 102, the Examiner is required to specifically identify where a reference is perceived to identically disclose each and every feature of a claimed invention, particularly when such is not apparent as in the present case. *In re Rijckaert*, 9 F.3d 1531, 28 USPQ2d 1955 (Fed. Cir. 1993); *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481 (Fed. Cir. 1984). That burden

has not been discharged. Indeed, there are significant differences between the claimed method and Meyer's method that scotch the factual determination that Meyer discloses a method identically corresponding to that claimed.

Specifically, the limitations of claim 5 have been incorporated into claim 1 and the impurity regions have been identified for source/drain regions. Thus independent claim 1 requires ion implanting impurities **through** the nitride polish stop layer to form impurity regions for source/drain regions. No such method is disclosed or suggested by Meyer.

In rejecting claim 5 the Examiner pointed to various portions of Meyer. However, Applicants are unable to find any mention of forming impurity regions for source/drain regions **through** the nitride polish stop layer. In fact, Meyer discloses the opposite.

Applicants would initially note that at column 4 of Meyer, lines 1 through 4, it is the **trenches** that are **doped** to form a **channel stop dopant**. However, **after the polish-stop layer 44 is removed** (column 4 of Meyer, lines 60 and 61), the source/drain regions are formed (column 5 of Meyer, lines 10 through 19).

Even in the case of forming channel-stopped dopants at the bottom or sides of the trenches, the impurities do **not** appear to be implanted **through** the nitride polish stop layer.

Thus, not only does Meyer fail to disclose a method corresponding to that claimed, Meyer in fact **teaches away** from the claimed invention which, as Applicants have maintained throughout the specification, follows conventional wisdom. But the present invention departs from conventional wisdom as disclosed at paragraph [21].

Claim 7

Applicants separately argue the patentability of **claim 7** which **further** requires **etching** to remove an upper surface of the insulating material filling the trench so that the upper surface of the insulating material is substantially coplanar with the upper surface of the semiconductor substrate before removing the nitride polish stop layer. No such manipulative step is disclosed or suggested by Meyer.

The Examiner pointed to various portions of Meyer which illustrate that etching may be used **instead** of polishing (noting column 3 of Meyer, lines 32 and 33). However, claim 7 requires **etching after polishing** to remove a portion of the upper surface of the insulating material filling the trench so that the upper surface is substantially coplanar with the upper surface of the semiconductor substrate. No such combination of polishing and etching is disclosed or suggested by Meyer.

The above argued differences between the claim method and Meyer's method undermine the factual determination that Meyer discloses a method identically corresponding to that claimed. *Minnesota Mining & Manufacturing Co. v. Johnson & Johnson Orthopaedics Inc.*, 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992); *Kloster Speedsteel AB v. Crucible Inc.*, 793 F.2d 1565, 230 USPQ 81 (Fed. Cir. 1986). Applicants, therefore, submit that the imposed rejection of claim 1 (and presumably claims 4 through 7) under 35 U.S.C. § 102 for lack of novelty as evidenced by Meyer is not factually viable and, hence, solicits withdrawal thereof.

Claims 2 and 3 were rejected under 35 U.S.C. § 103 for obviousness predicated upon Meyer.

This rejection is traversed. Specifically, claims 2 and 3 depend from independent claim 1. Applicants incorporate herein the arguments previously advanced in traversing the imposed rejection of claim 1 under 35 U.S.C. § 102 for lack of novelty as evidenced by Meyer. The Examiner's additional comments with respect to claims 2 and 3 do not cure the previously argued deficiencies of Meyer. Accordingly, even if Meyer's method is modified as suggested by the Examiner, and Applicants do not agree that the requisite fact-based motivation has been established, the claimed invention would not result. *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 USPQ2d 1434 (Fed. Cir. 1988).

Applicants, therefore, submit that the imposed rejection of claims 2 and 3 under 35 U.S.C. § 103 for obviousness predicate upon Meyer is not factually or legally viable and, hence, solicit withdrawal thereof.

New claim 8


New claim 8 is clearly free of the applied prior art for reasons similar to those previously argued in separately traversing the rejection of claim 7 under 35 U.S.C. § 102 for lack of novelty as evidenced by Meyer. Specifically, Meyer neither discloses nor suggests a method comprising **polishing followed by etching** to remove part of the upper surface of the insulating material filling the trench so that the upper surface of the insulating material is substantially coplanar with the upper surface of the semiconductor substrate. Meyer discloses, at most, either polishing or **etching**, but **not polishing followed by etching**. Accordingly, claim 8 is clearly free of the applied prior art.

Based upon the foregoing it should be apparent that the imposed rejections have been overcome, and that all pending claims are in condition for immediate allowance. Favorable consideration is, therefore, solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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